CHARGE NUMBER: 1901

PROJECT TITLE: Biochemical Modification of Tobacco

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I. LANCASTER LEAF TOBACCO COMPANY (LLTC)-TYPE FERMENTATION OF BURLEY TOBACCO (D. Teng, S. Tenhet)[1]

Small scale solid fermentation of Burley strips and stems were carried out at R&D to determine the effect of sugar concentrations to the degree of nitrate removal from the materials. Samples were treated with water or different concentrations of sugar, and kept at 50°C for up to three weeks. Samples were dried, ground and submitted for analysis. Results will be reported upon the completion of the analysis.

II. FARM STUDY

Coker 319 Bright tobacco leaves from mid-stalk position were primed and flue cured at the Southern Piedmont Experiment Station at Blackstone, Virginia. Some plants were also stalked out and are being air cured. These samples will be used in a model study to determine the effect of reducing sugar to filling power and expandability. (D. Teng, G. Nixon, K. Walls)[2]

Samples were taken at different stages of flue curing and air curing, and the changes in pectinmethylesterase activity were determined. On dry tobacco weight basis, the enzyme profile from the mid-stalk leaves was very similar to that of the bottom-stalk leaves. The enzyme activity change could be attributed to temperature, time and moisture content of the leaves being cured. (G. Nixon, K. Walls, E. Mooz)[2]

A study of Burley tobacco was initiated at a farm in Abingdon, Virginia. Burley plants were stalk cut and subjected to air curing. Leaves were also primed and shipped to Southern Piedmont Station to be flue cured. This set of samples also will be used in a model study to determine the effect of reducing sugar on filling power and expandability. Chemical analysis, smoke chemistry and subjective characteristics also will be determined on all samples. (D. Teng)

III. TOBACCO EXPANSION

Burley strips were heated by a small scale radiant heat system, equilibrated and shredded. The equilibrated C.V.'s with/without the

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radiant heat treatment were determined. No significant difference was observed. On the other hand, Burley cut filler which was treated by the radiant heat showed a significant increase in filling power as compared with the non-radiant heat treated filler. (E. Mooz, K. Walls)[3]

Tobacco fillers (total blend) from the Manufacturing Center Primary were treated by the radiant heat system. The samples taken before and after the ADT dryer showed very significant increases in filling power by the treatment. The experiments will be repeated to verify the results. (E. Mooz, K. Walls, D. Teng)[3]

REFERENCES

1. S. Tenhet - PM Notebook #7225.
2. K. Walls/G. Nixon - PM Notebook #7528.
3. E. Mooz - PM Notebook #7443.

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